

Parallels between AIDS, Leprosy and Syphilis*

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Most American tourists on their trips to Europe spend much time sightseeing and visiting museums, castles, and antique churches. However, few of these tourists are so observant as to notice that in many medieval churches the outside walls are not constructed of solid stone, but have built in or incised at irregular intervals narrow slits at the height of the heads of children and fairly short adults. The slits in the church walls were made deliberately in order to give persons who were not permitted to enter the church the opportunity to stand outside during the church service and thus to attend the religious services from a distance.

The people who were generally condemned to this uncomfortable participation in the religious ceremony were those who had been diagnosed as lepers, because since biblical times it had always been assumed that leprosy was a highly contagious disease and easily transmitted from person to person by casual contact or meaningless proximity. Hence, the mere presence of a person diagnosed as a leper in a church pew was considered very dangerous to all present at the service.

The cause of this unfortunate tradition was the *Bible*, namely a Book of the Old Testament. Best known and most influential was "Leviticus XII and XIII," which describe the tasks of the Hebrew priests who were in charge of inspecting all inhabitants for the possibility of being carriers of leprosy. After the examination, the Levites continued to be in charge of the inspection and treatment of the lepers and of the subsequent disposition of those persons who had been diagnosed as having this illness. Then they became *Aussatze*, as they were designated in German, ie, persons set apart; or—according to the *Bible*—they were suffering from *Zara'at*. The precise meaning of the Hebrew word has never been literally established. Hippocrates is said to have translated *Zara'at* as leprosy, or, rather, as scaly, and, therefore, it also may have been psoriasis, seborrhea or pityriasis. Literally translated from Hebrew, *Zara'at* means a blow or a stroke, and thus indicates how the disease was taken very seriously.

The Levites had no medical training; nevertheless, they were in charge of the conduct exhibited by the population and filled the role of a type of "health police." The frequent use of the word "unclean" does not necessarily mean unwashed as in dirty clothing, but it did mean an ugly, discoloration or acne-like skin eruption, a rash, scabs, and perhaps even also a strawberry birthmark.

The story of the leper squints¹, ie, the slits in the medieval church walls which served to keep the lepers out of church and

gave them uncomfortable and little access to the religious services, as is altogether the history of leprosy. It cannot help but remind us of the much briefer history of AIDS (Acquired Immune Deficiency Syndrome), the existence of which is of unknown duration, and the virus of which was first isolated in 1983 by Luc Montagnier in the Pasteur Institute in Paris and confirmed in 1984 in the United States by Robert Gallo and colleagues in the National Cancer Institute (there was dispute about who really found the virus first). Like leprosy, AIDS leaves the patient particularly vulnerable to supervening infections. The virus that causes AIDS is known as HIV (Human Immune Deficiency Virus). This virus kills certain cells in the immune system and thus the body of the AIDS patient is left powerless to fight off the infections that surround us at all times, and the patient eventually dies.

In many respects, the sudden appearance of AIDS bears much resemblance to that of the onset of syphilis in the late 15th century, at the time of the return of Columbus from his voyages to the New World. It was a frightening event, an incredibly rapid and extensive spread of a new disease that inflicted various stages of one illness upon the patient. It took some time for both patients and doctors to realize that the various forms of syphilis were actually one and the same disease, not too dissimilar from the understanding of AIDS, where the beginning often is Kaposi's Sarcoma. It was a frightening symptom that had been known to the Western World from observations in the African and Haitian populations long before, but the significance of which had not been recognized. And again, as in AIDS, where the just-named sarcoma gradually gives way to bronchopneumonia, a fatal protozoan pneumonia known as *Pneumocystis carinii*, which eventually brings on death.

As in syphilis, the cause and mode of transmission of AIDS were initially entirely unknown; in syphilis it took many decades until the pious societies of Christian Europe and Colonial North America recognized and admitted the sexual transmission of this new disease, which was considered sinful by many. There were a number of physicians who were reluctant to treat syphilis patients.

Oddly enough, AIDS, which has the same mode of transmission as syphilis, gradually acquired a new and different name. With the disappearance of the word "venery" from traditional daily language, all diseases transmitted through sexual intercourse, such as AIDS, the various forms of Herpes simplex, and Herpes of the external genitalia, are now described as "venereal" diseases, and more delicately as "sexually transmitted diseases." While this is generally applied to AIDS, other modes of its transmission have also been recognized. Blood transfusion was recognized early as a probable cause of AIDS, for which reason hemophiliacs who are in frequent need of transfused blood were in constant danger of infection with AIDS through the injection of

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this blood, unless it was thoroughly checked for HIV as it is now.

Just as lepers became *Aussatzige* (persons set apart from the human community), so AIDS patients have often been excluded from normal activities and gatherings of healthy people. Thus, a few children—hemophiliacs particularly—who had contracted AIDS through blood transfusions, have been excluded from school attendance.

More frequent is the acquisition of AIDS by drug addicts who use soiled needles and syringes that carry the AIDS virus; they unknowingly inject the dread disease into themselves. Whereas the sexual transmission of AIDS was originally associated with homosexuality only, and because of this sexual deviation, the patients chose to live apart from society; the other patient group who had acquired this disease through their drug addiction was equally set apart from law-abiding society.

Just as nowadays no easily accessible cure for AIDS has as yet been discovered, so neither leprosy nor syphilis could be treated and cured until the 20th century when chemotherapy and antibiotics became available.

In the medical approach to and treatment of the patient suffering from the diseases mentioned in this essay, there is yet one other important similarity: such patients who were suffering from diseases they had inflicted upon themselves in a presumably sinful or careless manner were frequently very far from welcomed, if not rejected, by the medical profession.

Perhaps the most explicit but tentative rejection of syphilitic patients can be found in the earliest American medical book ever published, known as *The Angel of Bethesda*². It was written by Cotton Mather (1663-1728), who became infamous through his participation in the witch trials in Salem, Massachusetts but whom Dr. Richard Shryock described as the "first significant figure in American medicine." Mather was primarily a clergyman, but he also had read the entire available medical literature of that time, so that he was fully conversant with the practice of medicine. In fact, far in advance of his time, Mather was deeply interested in the subject of preventive medicine and participated in a broadly conceived project of introducing inoculation against smallpox in the Boston area.

He was even aware of the nutritional causes of various diseases, thus he engaged in a rational discussion on the cause of scurvy. Mather strongly advised against a diet largely consisting of salt meats, as had been customary on long sea voyages. He also advised the generous use of citrus fruits and juices. In doing the latter, he demonstrated his familiarity with the use by the British Navy begun sometime earlier to provide citrus fruits for sailors who were consequently known as "limeys" to prevent scurvy.

But, to return to Cotton Mather's writings on syphilis, he was fully aware of its mode of transmission, thoroughly critical of it, and quite uncertain whether it was proper for him, a clergyman, to accept syphilitic patients in his practice. The following are his words on syphilis as quoted from *The Angel of Bethesda*:

"As for my remedies unto this foul disease—you are so offensive to me, I'll do nothing for you, you shall pay for your cure."

This payment for the cure did not mean that the patient had to pay money, although that may have been the case also, but that the patient was to undergo a most unpleasant treatment by being sent to a surgeon. Mather referred here in all probability to the mercury

treatment which had come to European and to American medicine from the Arabian pharmacy, where it was used for the treatment of all skin eruptions and rashes, thus also at times for syphilitic skin eruptions. The side effects of mercury were unpleasant, inasmuch as they lead to super-abundant salivation and the loosening and loss of teeth. Mather addressed himself to the patient:

"Gett ye gone to the Chirurgion!" [who was to give him a medicine which] "will keep you in torment for 3 days and, when made a thorough cure—then sin no more! Don't return to Folly anymore. If you do ... I have no more to say to you."

Even though the treatment of syphilis did not involve the use of surgical instruments, it is interesting the custom arose that prescribed such patients be treated by surgeons and not by general practitioners or internists.

Although it was generally known by the medical profession and the public at large that syphilis was a sexually transmitted disease, it did not seem to occur to anyone that simple casual contact with a syphilitic patient could convey a danger of contagion.

The biblical prescriptions for the conduct and treatment of lepers, as they were documented in "Leviticus XIII," were in force with almost complete exactitude until the first half of the present century, when medications to treat leprosy were discovered.

By then the fear of lepers had gradually abated because most people had become aware that in reality the contagiousness of leprosy was not as acute as had been feared for centuries; in fact it required protracted cohabitation and intimate contact for it to be transmitted from a patient to a healthy individual.

So far as AIDS is concerned, patients with the disease have been feared and treated not unlike lepers in biblical antiquity. AIDS has recently been freed from exaggerated fear since an editorial in the *New England Journal of Medicine* found its way to the following newspaper headline, "AIDS 'clearly' not spread casually." This headline is derived from the following text in the same journal: "Now that doctors have clear evidence AIDS isn't caught through casual contact, they should play a more active part in 'quelling the hysteria' over transmission of the deadly disease..."

"'The picture is . . . clear,' Dr. Merle A. Sande wrote in an editorial in a recent issue of the same journal. 'The AIDS virus is spread sexually, by the injection of contaminated blood, and vertically from mother to fetus. Other modes of transmission are extremely rare.'"

On the whole, contagion was a phenomenon not feared much in early medicine. Even Hippocrates was not aware of it, although he described a clear case of contagion in his book *Epidemics*:

"In Thasus, early in spring ... many had swellings beside the ears, either on one or both sides, in most cases without fever, and not necessitating confinement to bed; some, however, were a little heated. In all cases these swellings subsided without giving trouble, and none went on to suppuration as do those from other causes. In character they were flabby, large, diffuse, without inflammation or pain; in all cases they disappeared without a sign. These conditions occurred in youths, young men, and adults; mostly in such as took exercise in the wrestling schools and gymnasias: but they seldom attacked women. Many had dry coughs without expectoration and hoarseness in speaking. Not long after, but in some cases a considerable time later, painful inflammation

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occurred in one or both testicles; fever in some cases, in others not. The condition was as a rule very troublesome. In other respects they had no illnesses requiring medical attention."³

Since the word or concept of contagion had not come into existence in the days of Hippocrates, the significance of the distribution of the disease he was describing eluded him. The disease (mumps) occurred in youths, young men, and adults, mostly in those who took exercise in the wrestling schools and gymnasia. However, the disease seldom attacked women

In later years when the concept of contagion was generally accepted, any physician's attention would have been arrested by the fact that the unnamed disease befell only male patients and rarely any women. Those youths and young men who visited wrestling schools and gymnasia performed their exercises in considerable physical intimacy, which facilitated the transmission of the disease. Women were not admitted to these institutions; therefore, they were not exposed to the mumps epidemic and rarely contracted the disease.

Awareness of contagion as such arose in the 14th century in connection with the various waves of plague that appeared in 2 forms: bubonic and pulmonary. Because of the appearance of numerous subcutaneous hemorrhages or petechiae, which made the patient appear dark-skinned, the plague soon became known as the Black Death. Since the various outbreaks of this fearful disease generally coincided with the arrival of ships from the East, most frequently the Levant (East Mediterranean), some extremely observant and innovative persons introduced a mandatory waiting period of 30 or 40 days before the newly arrived ships could unload their freight or the passengers be allowed to go on land. This waiting period, best known as *trentina*, for the original 30-day waiting period, was found to be insufficient. It was first established in Ragusa, now known as Dubrovnik in Croatia in southwest Yugoslavia on the Adriatic Sea.

The first truly modern biological concepts of contagion entered medical thinking only with the earliest graphic statement on its existence. This came into being amazingly late, if we consider the clear disease pictures of the earlier days. After all, Hippocrates' description of mumps contained a clear picture of a contagious disease. The first scientific statement of contagion was pronounced by Girolino Fracastoro (1478-1553)⁴, a true Renaissance personality who was at the same time a physician, a poet, a physicist, an astronomer and a pathologist. He is best known for his medical poem on syphilis, "Syphilis sive morbus gallicus" (Verona, 1530). In this poem he coined the name of the disease after the legendary shepherd Syphilus and stressed its venereal cause. More important, however, is his treatise on contagion published in 1546. Here is the first unqualified statement concerning the existence of microorganisms (*seminaria contagionum*), capable of reproduction in appropriate media. To be sure, Fracastoro did not think of these imperceptible particles, whose existence he divined but could not prove, as living organisms (*contagia animata*); but we must consider that his work was done as early as 1530 and without the help of a microscope. In fact, this was centuries before the instrument was invented. When we consider that Fracastoro worked solely on the basis of logical deduction, we must read in awed admiration his definition of contagion:

"If we allow ourselves to sketch a sort of tentative definition of contagion, we shall define it as: A certain precisely similar

corruption which develops in the substance of a combination, passes from one thing to another, and is originally caused by infection of the imperceptible particle."

With the appearance of the concept of contagion in the writings of medicine, definite parallels can be observed in the 3 diseases: AIDS, leprosy and syphilis, with the one difference that there are different modes and degrees of severity of contagiousness. Keeping sufferers of this or that disease from attending church by having them remain outside and follow the religious ceremonies through narrow slits in the wall of the church is evidently an unnecessary or, as Dr. Hande stated in the *New England Journal of Medicine*, "An hysterical reaction of exaggerated fear."

REFERENCES

1. Weymouth A. *Through the Leper Squint: A Study of Leprosy from pre-Christian Times to the Present Day*. London, England: Selwyn & Blount, Paternoster House, Paternoster Row; 1938;71-73.
2. Beall OR Jr and Shryoch H. *Cotton Mather: First Significant Figure in American Medicine*. Baltimore, Maryland: The Johns Hopkins University Press; 1954.
3. *The Genuine Works of Hippocrates*, translated from Greek with preliminary discourse and annotations by Francis Adams. New York, NY: William Wood & Company; 1929.
4. Fracastorii H. *De Contagione et Contagiosis Morbis et eorum Curatione*, Libri III. Translation and notes by Wilmer Cave Wright. New York, NY: Putnam; 1930; 7-43.

